

REMARKS/ARGUMENTS

Favorable reconsideration of this application in view of the following discussion is respectfully requested.

Claims 13-32 are pending. Claims 13 and 14 are amended for purposes of clarification to use the word “only” instead of “solely.”

Applicant first wishes to thank the Examiner for the courtesies extended during the personal interview of September 8, 2004, at which time the outstanding issues in this application were discussed. Although no agreement was reached with respect to the ultimate patentability of the application, arguments substantially as presented below were made.

In the outstanding Office Action, Claims 13-24 were rejected under 35 U.S.C. § 102(b) as being anticipated by Chang, and Claims 25-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chang. Applicant respectfully traverses these rejections on the grounds that independent Claims 13 and 14 each define an invention which is neither anticipated by nor obvious over Chang.

Recapitulating briefly, the present invention, as described by the specification, relates to an optical pumping module that defuses light before it is received by a laser rod. A principle behind the present invention is to prevent pumped light from concentrating on any given area of the rod. This “indirect pumping” avoids the creation of preferential direction and causes the entire material of the rod, not just the central portion of the rod, to become excited. (Specification at 8.)

The device described by the Chang reference operates under a completely different principle. As shown in Figure 2 of Chang, light from diode modules 30 directly impinges the laser rod 34. Not only does this light directly impinge the laser rod 34, but it is even focused and concentrated on specific portions of the laser rod by the light concentration channels 22 and 24, which have a highly reflective coding. (Chang at col. 4, ll.10-44.) These light

concentration channels have a highly reflective coating to minimize the transmission loss.
(Id. at ll. 20-21.)

By contrast, the invention defined by the pending claims requires that the amplifying medium is pumped “only by the light reflected by the wall of the diffusive reflector.” (Claims 13 and 14.) Thus, the present invention pumps the amplifying medium solely with defused light, whereas the device of Chang focuses and concentrates light that is directly impinging the laser rod. Accordingly, Chang is not believed to anticipate or make obvious the inventions of Claims 13 and 14.

On page 4 of the outstanding office action, the Kojuma reference is cited as disclosing a defusive ceramic, however, Kojuma fails to account for the deficiencies of Chang, and thus, is not believed to anticipate or make obvious the inventions of Claims 13 and 14, when considered alone or in any proper combination with Chang.

Therefore, Applicant submits that Claims 13 and 14 patentably distinguish over the applied references. Since Claims 15-32 depend directly or indirectly from Claim 13 or Claim 14, Applicant also submits that Claims 15-32 patentably distinguish over the applied references for at least the same reasons as Claims 13 and 14.

During the interview, the Figure 8 of the Tsunekane patent (U.S. 6,532,248) was also discussed. Addressing the Tsunekane reference, Applicant first wishes to point out that much of the pumping light in Figure 8 which comes from the end of the optical fiber 125 would strike the glass tube 3 prior to being diffused. The rays striking the glass tube are refracted by the glass tube, which would cause the accompanying light rays to concentrate on the laser rod. As a result, a not insignificant portion of light rays emanating from the optical fiber 125 directly strike the laser rod before being reflected by the diffusive mirror 124. This disclosure contradicts the teachings of Applicant’s specification which shows that the pumping light rays do not strike the laser rod or the glass tube which confines the cooling

liquid before reaching the diffusive reflector. As defined by independent Claims 13 and 14, the present invention is configured such that the amplifying medium is optically pumped only by the light reflected by the wall of the diffusive reflector. This is not possible in the Tsunekane reference because, as shown in Figure 8, the pumping light rays which emanate from the optical fiber 125 strike the glass tube 3 and is refracted toward the laser rod. Accordingly Tsunekane is not believed to anticipate or make obvious the invention of Claim 13 or 14, when considered alone or in combination with Chang and/or Kojuma.

In view of the foregoing discussion, no further issues are believed to be outstanding in the present application. Therefore, Applicant respectfully requests that the present application be allowed and be passed to issue.

Respectfully submitted,

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Registration No. 25,599
Robert C. Mattson
Registration No. 42,850